ABSTRACT

The present invention implements a method and system for dynamically adapting the modulation and coding scheme for radio links in a wireless communications network based on a retransmission environment model in order to maximize throughput and most efficiently allocate bandwidth resources. The present invention encompasses a refined calculus and methodology for deriving the link adaptation thresholds in a retransmission environment using a complex model and analysis of the retransmission environment. The present invention holds particular application for wireless data communications as opposed to real time data services because it is based on a retransmission model applicable primarily for data services. A critical component of this new link adaptation system is a "no transmission" cutoff mode that is selected for SIR below a base threshold value. This new mode prevents system instability and misallocation of bandwidth in a wireless communication system.